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National Spent Nuclear Fuel Program

Program Management Plan



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National Spent Nuclear Fuel Program Program Management Plan

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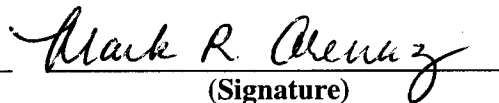
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National Spent Nuclear Fuel Program Program Management Plan

September 2005

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ABSTRACT

This program management plan is the document that sets forth the mission, objectives, plan, organization, and responsibilities for those managing the U.S. Department of Energy (DOE) National Spent Nuclear Fuel Program (NSNFP). This plan is consistent with the spent nuclear fuel agreement between the State of Idaho, and the U.S. Navy and the DOE; and *The Memorandum of Agreement for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste*. This program management plan will be revised when necessary to reflect any changes in program strategy, budget, organization, responsibility, or other change that might affect the mission and objectives of the NSNFP.

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ACRONYMS

DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
EM	Office of Environmental Management
HLW	high-level radioactive waste
ICP	Idaho Completion Project
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
M&O	Management and Operations Contractor
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission
NSNFP	National Spent Nuclear Fuel Program
OCRWM	Office of Civilian Radioactive Waste Management
OQA	Office of Quality Assurance
PSO	Program Support Organization
QA	quality assurance
QAPP	Quality Assurance Program Plan
QARD	OCRWM Quality Assurance Requirements and Description
QAS	Quality Assurance Staff
QASM	Quality Assurance Staff Manager
QE	Quality Engineer
RW	Office of Civilian Radioactive Waste Management
SNF	spent nuclear fuel
WBS	work breakdown structure

Program Management Plan

1. INTRODUCTION

This document is the program management plan for the U.S. Department of Energy (DOE) National Spent Nuclear Fuel Program (NSNFP). This plan is consistent with the spent nuclear fuel (SNF) agreement between the State of Idaho, and the U.S. Navy and the DOE; and the *Memorandum of Agreement (MOA) for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste*¹ (as amended by the July 2001 Action Memorandum²). It is also consistent with DOE policies and the decisions made through the National Environmental Policy Act (NEPA) process. This document provides the NSNFP organization, management, and plans for achieving its role in the ultimate disposition of DOE SNF. In addition to its role with DOE SNF, this plan discusses the new NSNFP role in supporting DOE high-level radioactive waste (HLW) disposition activities as requested by Frank Marcinowski, Deputy Assistant Secretary for Logistics and Waste Disposition enhancements, DOE-HQ, in a letter to Beth Sellers.³

1.1 Background

For many years the DOE has managed SNF to support various missions and programs. A process DOE used to manage this material was to chemically separate strategic material, such as uranium or plutonium, from the waste. DOE stored about 100 million gallons of HLW by-product as a result of these reprocessing operations. As the need for uranium and plutonium decreased, however, it became necessary to store the unprocessed DOE SNF for extended periods of time. DOE had not intended for SNF to be in long-term storage.

In 1992, DOE discontinued the reprocessing of SNF to recover strategic materials. Both the facilities used for storage and the SNF itself began experiencing the effects of “aging” from this extended storage. New efforts are now necessary to ensure fuel stabilization and facility management until decisions for long-term disposition are made and implemented.

Some of the HLW tanks that store the reprocessing by-product were designed for as little as 25 years service and began to experience the affects of aging and in some cases, began to pose an environmental threat. In addition to the liquid HLW, DOE produced other forms of HLW including sodium-bearing liquid waste from decontamination and maintenance of reprocessing equipment. In preparation for long-term disposal, much of these liquid wastes were converted into more stable forms such as calcine or vitrified logs.

The term “DOE SNF” will be used throughout this document to represent DOE-managed fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing. The fuel comes from research reactors, production reactors, naval reactors, etc., as well as SNF returned from domestic and foreign research reactors to be managed by DOE. The HLW referred to in this plan is the acid and chemical by-product from reprocessing irradiated fuel and target elements to separate out plutonium and uranium and its treated products. This HLW is stored at DOE facilities that performed reprocessing operations, i.e., the Hanford site, the Savannah River site, and the Idaho National Laboratory (INL).

In 1992, the Secretary of Energy directed the Assistant Secretary for the Office of Environmental Management (EM) to develop an integrated, long-term SNF management program. The program would consolidate under EM all DOE SNF and associated facilities not addressed by the DOE Office of Civilian Radioactive Waste Management (OCRWM). The OCRWM mission is to develop and manage a federal

system for disposing of all commercial SNF, DOE SNF, and HLW. EM is responsible for the management policy and process to prepare DOE SNF and HLW for transport and repository acceptance.

In June 1995, DOE issued the Record of Decision on the *Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Program's Environmental Impact Statement*.⁴ The Record of Decision selected "Alternative 4A, Regionalization by Fuel Type" as the chosen option. This Record of Decision was modified to agree with the Consent Order (PSC 1995)⁵ issued on October 17, 1995, modifying the SNF shipments to and from the State of Idaho. The amended version of the Record of Decision mandates consolidation of all existing and newly generated SNF at three DOE sites prior to shipment for disposal as indicated below:

- Hanford production reactor fuel and fuel not requiring treatment will remain at Hanford; sodium-bonded Fast Flux Test Facility fuel will be shipped for treatment to INL, formerly the Idaho National Engineering and Environmental Laboratory (INEEL).^a
- Naval fuel will be shipped to INL for examination and interim storage.
- Nonaluminum-clad fuels will be consolidated at INL, except Fort St. Vrain fuel, which is in Colorado and will remain there.
- Aluminum-clad fuels will be consolidated at the Savannah River Site.

In September 2002, the *Idaho High-Level Waste & Facilities Disposition Final Environmental Impact Statement*⁶ further clarified the handling of HLW as follows:

- Treat and store HLW until disposal
- Develop technologies for final disposition of HLW including support for treatment of sodium-bearing waste.

Since 2002, EM has established the Risk-Based End State Cleanup Project. This project redefines the approach that EM uses to conduct cleanup. The approach changes from one that is based on compliance with hundreds or thousands of individual and independent requirements and actions to one that is based on risk-based end states and a clearly defined and coordinated path forward.

1.2 Purpose of the NSNFP

In October 1995, the settlement agreement (Consent Order PSC 1995) between the State of Idaho, and DOE and the U.S. Navy designated the INL (INEEL) as the DOE lead laboratory for SNF. The NSNFP is performing this role as stated in the agreement, "DOE shall direct the research, development and testing of treatment, shipment and disposal technologies for all DOE spent fuel, and all such DOE activities shall be coordinated and integrated under the direction of the Manager, DOE-Idaho Operations Office." In May of 2005, DOE expanded the focus of the NSNFP to activities required to disposition DOE SNF and HLW in the geologic repository at Yucca Mountain (See Reference 3).

a. On February 1, 2005, the INEEL contract split forming the INL, a consolidation of INEEL laboratory activities and Argonne National Laboratory-West, and the Idaho Completion Project (ICP). The NSNFP is part of the INL contract. The SNF disposition work at the INL will be performed under a separate ICP contract. Throughout this plan, these two contractors will be referred to as the INL, since both contractors reside on the INL site.

In this role, the NSNFP works with OCRWM, DOE-EM, the Savannah River Site, INL, and the Hanford Site. The activities include:

- Providing ongoing technical support to review pertinent sections of the license application for the Yucca Mountain repository to ensure that DOE SNF is reflected appropriately in the license application.
- Supporting EM in coordinating and facilitating the review of the pertinent license application sections by the DOE offices and local SNF programs at INL, Hanford, and Savannah River.
- Preparing information to be included in the license application, and preparing responses to information requests from the Nuclear Regulatory Commission (NRC).
- Developing and evaluating the DOE SNF packaging and handling requirements and capabilities. Focus is being placed on ensuring that the interfaces between the DOE SNF packages and the OCRWM receiving facilities are well-defined, controlled, and optimized.
- Preparing information about DOE SNF in support of the OCRWM acquisition of the transportation system to move the DOE SNF to the repository.
- Supporting EM in discussions with OCRWM related to the information that OCRWM needs and emphasizing a cost-effective approach to meet the OCRWM information requirements.
- Supporting EM in the continuing analysis and development of interim SNF storage and packaging plans.
- Maintaining the NSNFP Quality Assurance (QA) Program in compliance with DOE/RW-0333P, Quality Assurance Requirements and Description
- Fulfilling other waste acceptance obligations as specified in the EM/OCRWM Memorandum of Agreement

In addition to the above work on SNF, DOE directed the NSNFP to use its centralized resources to support the EM HLW programs. The NSNFP will support the following HWL activities:

- Coordinating communications between DOE HLW organizations and the OCRWM-managed repository program to ensure HLW is reflected appropriately in the Yucca Mountain license application.
- Assisting EM as it interfaces with OCRWM regarding HLW and disposition issues.
- Supporting analysis, as requested by EM, of the vitrified plutonium waste form in the Yucca Mountain license application.
- Developing plans for optimizing the production of the HLW forms and efficient use of the repository based on insights into the performance needs at the repository.
- As requested, supporting other EM HLW disposition activities.

The role of the NSNFP continues to evolve to better meet the needs of EM and OCRWM while continuing its stewardship role for DOE SNF and HLW.

1.2.1 Purpose of the Program Management Plan

This program management plan defines the NSNFP's current role and establishes the process to plan and implement research, development, testing, and DOE site integration and coordination as part of the EM SNF and HLW mission. This plan performs the following functions:

- Defines the mission and objectives of the NSNFP
- Describes the organization of the NSNFP, including its management and structure as it relates to external organizations
- Explains the interfaces among DOE-Headquarters, the DOE field sites, OCRWM, and related projects
- Summarizes the planning process including schedules, milestones, and the budget
- Addresses the management strategies for key projects within the NSNFP
- Defines the scope of the QA responsibility.

The NSNFP requires the integrated efforts of DOE-Headquarters, DOE field or operations offices, and contractors at various sites across the country to meet its objectives. This program management plan provides a uniform set of requirements and expectations for the NSNFP and also adheres to the established principles and guidelines for effective program planning and administration.

1.2.2 Plan Revisions

This program management plan is a living document that reflects the current status of the NSNFP. The document is controlled and will be revised as strategic decisions are made, progress is achieved, and additional information becomes available. At a minimum, limited revisions will be performed annually to embody the latest detailed work plan information.

2. MISSION AND OBJECTIVES

2.1 Mission

The NSNFP mission is to provide the technology and guidance needed to ensure safe, efficient handling and disposition of DOE SNF and HLW.

2.2 Objectives

The NSNFP provides technology solutions and guidance for safe, efficient management of DOE SNF and HLW at operating sites. In addition, it supports OCRWM in formulating a licensing strategy and by providing the analyses and research needed to consider all DOE SNF and HLW during the repository license application process. The following subsections describe the NSNFP objectives listed below:

- Objective 1—Address research, development, and testing needs
- Objective 2—Ensure DOE SNF acceptance criteria are established
- Objective 3—Ensure repository license includes DOE SNF and HLW
- Objective 4—Provide management, integration, and communication
- Objective 5—Address HLW handling and management needs.

2.2.1 Objective 1—Address Research, Development, and Testing Needs

The NSNFP directs the research, development, and testing of treatment, shipment, storage, and disposal technologies for all DOE SNF. The NSNFP is challenged to help ensure safe, effective management of SNF generated from DOE, university, and other domestic sites, and foreign research reactors. With more than 200 types of fuel that must be managed, information and technology are vital to ensuring safe and efficient interim and long-term storage and transportation processes for all the DOE SNF.

The NSNFP collaborates with DOE laboratories to develop and deploy technologies. By coordinating common needs for research, technology development, and testing programs, the NSNFP can achieve cost efficiencies and eliminate redundant activities across all the DOE SNF sites. The NSNFP will address needs in four distinct areas of SNF management:

- Solutions for safe, efficient packaging and shipment technologies
- Solutions for safe, interim storage, and ultimate disposition at a repository
- Solutions for obtaining adequate SNF information
- Compliance with safety and regulatory requirements.

2.2.1.1 Safe, Efficient Packaging and Shipment. According to the *Memorandum of Agreement for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste*, EM will design and fabricate a standardized DOE SNF canister to accommodate the more than 200 types of DOE

SNF. The NSNFP will support the development of the preliminary design, and DOE sites will be responsible for procurement of the canister and shipment.

The NSNFP will also perform research and technology development to support the SNF canister and DOE SNF shipments as needed. A remote welding and nondestructive examination process for closure welds is a technology needs example for safe packaging.

The NSNFP will prepare information about DOE SNF in support of the OCRWM acquisition of a transportation system to move DOE SNF to the repository. NSNFP will support EM in providing OCRWM information on DOE SNF critical to the acquisition of the transportation system.

2.2.1.2 Safe, Interim Storage and Repository Disposal. The NSNFP will perform materials science research to address the common materials-related risks of interim storage at DOE SNF sites and repository disposal for the DOE SNF. At present these include:

- Developing a long-term corrosion-resistant advanced neutron absorber for components such as canister baskets
- Evaluating canister performance through materials aging, corrosion, degradations, and chemical reactivity testing.

2.2.1.3 SNF Information. Consistent with the licensing strategy, the NSNFP must collect and evaluate DOE SNF information to increase confidence and minimize risk during the management of that fuel. The NSNFP will maintain a single source of technical information for all DOE SNF. The technical information will include isotopic information along with other information about mode of storage and physical location.

2.2.1.4 Compliance with Safety and Regulatory Requirements. The NSNFP will facilitate or perform research and contribute analysis in the following areas. This will minimize the risks associated with DOE SNF handling, transport, and disposal at the repository and will include:

- Design basis event analysis to identify possible accident scenarios associated with the handling and management of SNF at the repository and propose appropriate protection for those events
- Total system performance assessment to forecast the behavior of DOE SNF at the proposed repository and for the regulatory time periods
- Criticality analysis to examine criticality safety of DOE SNF and to establish control methods.

2.2.2 Objective 2—Ensure DOE SNF Acceptance Criteria Are Established

The NSNFP will provide a unified approach to the DOE SNF sites to prepare their fuel for transport to a repository. The NSNFP will provide guidance to DOE SNF sites to prepare fuel for transport and repository acceptance that is consistent with OCRWM requirements. It will also define the form and contents of the information package being shipped to the repository. The NSNFP will work with OCRWM to establish an acceptable information package for DOE SNF.

The program will provide the planning and integration to execute and conduct the necessary repository analyses and activities required to support the final disposal of DOE SNF. The NSNFP will support OCRWM information needs in the following areas to address repository acceptance requirements as they apply to DOE SNF:

- Postclosure performance
- Preclosure safety analysis
- Criticality analysis.

2.2.3 Objective 3—Ensure Repository License Includes DOE SNF and HLW

The NSNFP will closely support the needs of the repository program to achieve safe and timely disposal of DOE SNF. The NSNFP will support OCRWM in identifying the needed information, interfaces, acceptance criteria, and compliance procedures for license application and construction authorization of the repository and for the transportation system necessary to transfer DOE SNF. Specific goals to meet this objective include:

- Ensuring the DOE SNF is included in the repository design and documents
 - Environmental Impact Statement (1997–2000)
 - Viability Assessment (1998)
 - Site Recommendation (2001)
 - License Application (2005)
- Supporting EM in coordinating and facilitating the repository document reviews
- Ensuring DOE SNF is acceptable for repository receipt
- Simplifying and minimizing characterization requirements for geological disposition of DOE SNF
- Ensuring SNF information meets requirements
- Assisting DOE SNF sites with repository-ready interim storage issues
- Codisposing highly enriched uranium SNF with HLW as a base case
- Supporting activities related to the shipment technologies for DOE SNF
- Ensuring OCRWM acceptance for a standardized DOE SNF canister to package fuel during transport and storage
- Establishing a licensing basis considering bounding analyses and performance-based criteria.

2.2.4 Objective 4—Provide Management, Integration, and Communication

The NSNFP will provide the policies, strategies, and programs for management of DOE SNF. It will coordinate DOE SNF program activities to establish the safest, most cost-effective path for interim storage and treatment while awaiting transportation to a geological repository.

The NSNFP will provide for the management direction and integration of NSNFP activities. The NSNFP will provide the planning, measurements, controls, and reporting needed to ensure its objectives are accomplished. NSNFP will maintain an OCRWM-accepted QA program.

The NSNFP will establish mechanisms to facilitate communication with DOE-EM, OCRWM, DOE SNF sites, and the stakeholders. Teleconferences, technical exchange meetings, web pages, integrated schedules, the DOE SNF database, and other mechanisms will be used to prompt effective communication to address DOE SNF issues.

2.2.5 Objective 5—Address DOE HLW Handling and Management Needs

The NSNFP will develop a FY 2006 budget to support EM in coordinating the interface between the DOE HLW organizations, EM HQ, and OCRWM. NSNFP will incorporate into existing activities, as described in the above objectives, or add new activities as appropriate to support DOE HLW needs that are more effectively performed using the centralized resources available within the NSNFP. NSNFP will perform activities to coordinate communications and support EM interfaces with OCRWM, provide analyses requested by EM, and develop plans to optimize DOE HLW handling performance.

3. MANAGEMENT ORGANIZATION AND RESPONSIBILITIES

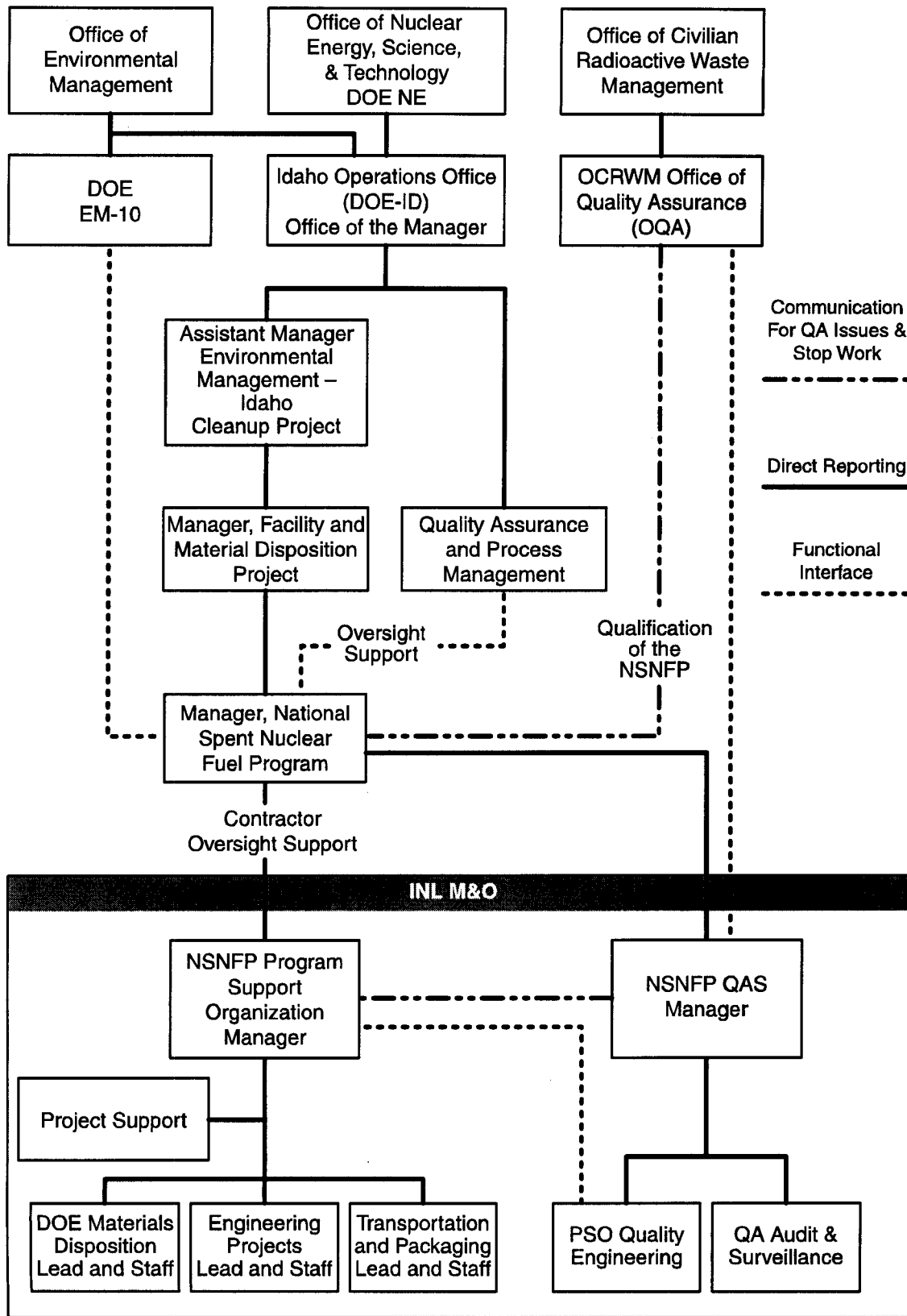
Operating from the DOE Idaho Operations Office (DOE-ID), the NSNFP organization supports the SNF and HLW Program missions through the Logistics and Waste Disposition Enhancements Office (EM-10) within the Office of Environmental Management (EM-1). Figure 1 illustrates the NSNFP management hierarchy and organization.

3.1 National Spent Nuclear Fuel Program Manager, DOE-ID

The NSNFP Manager resides at the DOE-ID office and interfaces with the Manager of DOE-ID, and DOE-EM and OCRWM representatives for overall policy and direction. The NSNFP Manager establishes the responsibilities and authorities of the NSNFP organizations and management and oversees the implementation of the NSNFP technical work tasks through approved detailed work plans and performance indicators. The NSNFP Manager establishes and maintains an organizational structure to implement the NSNFP QA Program described by the Quality Assurance Program Plan (QAPP). The NSNFP Manager uses the NSNFP Quality Assurance Staff (QAS) and other appropriate resources to effectively oversee the activities of the NSNFP Program Support Organization (PSO).

Through DOE-ID, the NSNFP Manager requests funding from DOE-EM to support its program plan. The NSNFP Manager integrates and coordinates activities with the DOE SNF sites, with other DOE Operations Offices, and OCRWM. The NSNFP Manager oversees research and technology development that provides solutions for DOE SNF management. The NSNFP Manager:

1. Approves the NSNFP QAPP and the Program Management Plan including:
 - The management and structure of the NSNFP organization
 - The NSNFP QA Program Policy directing mandatory compliance with the NSNFP QA Program.
2. Establishes and maintains an organizational structure to implement the NSNFP.
3. Establishes the responsibilities and authorities of the NSNFP organizations and management.



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Figure 1. NSNFP management and organization.

4. Ensures a QA organization for program assessments is established and maintained and is sufficiently independent from cost and schedule.
5. Directs the preparation of controlled QA program implementing documents for acceptance by the OCRWM Office of Quality Assurance (OQA). The documents describe the internal and external organizational interfaces, organizational structures, requirements, and responsibilities.
6. Assigns NSNFP technical work tasks to the PSO through approved budget and contract documents.
7. Periodically monitors assignments made to the NSNFP QAS Manager (QASM) to ensure that the QASM has no other assigned responsibilities that would prevent full attention to QA matters.
8. Establishes methods to escalate differences of opinion involving the NSNFP QA Program through the NSNFP management chain to obtain resolution.
9. Participates in the development and approval of MOAs between the DOE EM Program and OCRWM.
10. Approves NSNFP QA program implementing procedures.

3.2 NSNFP Program Support Organization Manager (Management and Operating [M&O] Contractor)

The NSNFP PSO Manager directs program activities of the NSNFP to implement the policy and direction provided by the NSNFP Manager. By direct action or through assignment, the NSNFP PSO Manager:

1. Actively interfaces with the NSNFP Manager regarding program policy, and performance and QA matters
2. Approves program management documentation and detailed work plans, life-cycle plans, and schedules
3. Establishes and maintains the organizational structure to implement the NSNFP
4. Assists in the establishment and maintenance of the NSNFP QAPP
5. Creates NSNFP Program QA documents including procedure drafts and provides support for processing those documents for approval and use by the NSNFP
6. Creates procedures with integrated quality engineering functions
7. Establishes processes for training coordination, document control, and records management for use by the NSNFP, and staffs those functions
8. Determines training and qualification needs of the PSO staff
9. Adheres to and requires all PSO staff to adhere to the NSNFP Program Policy directing mandatory compliance with the NSNFP QA Program
10. Establishes the internal responsibilities and authorities of the PSO staff

11. Assigns NSNFP technical work tasks to PSO technical leads
12. Approves procurement requisitions for items and services from the private sector that are within the PSO scope established by budget baseline documents
13. Generates responses to deficiencies identified during independent assessments in accordance with approved processes
14. Supports the performance of assessments in accordance with NSNFP procedures
15. Interfaces with the PSO Quality Engineer (QE), NSNFP QASM, or the NSNFP Manager, to resolve QA issues.

3.2.1 The PSO Technical Lead

As represented by the work breakdown structure (WBS), support tasks that contribute to the objectives of the NSNFP are grouped by work package. The PSO Manager assigns a group of tasks to a PSO technical lead, who in turn delegates individual tasks to PSO staff members. The PSO technical staff interfaces with PSO support staff to perform the technical work in accordance with approved NSNFP procedures.

1. Provides guidance and direction to the PSO staff for assigned tasks
2. Participates in document reviews as stipulated by NSNFP procedures
3. Performs work in accordance with NSNFP procedures
4. Oversees development and maintenance of NSNFP Work Planning/Quality Program Applicability Evaluations for the group of assigned tasks
5. Approves NSNFP-generated Task Management Agreements associated with the group of assigned tasks
6. Approves NSNFP-generated technical documents associated with the group of assigned tasks
7. Coordinates annual performance evaluations of active suppliers.

3.2.2 The PSO Technical Staff

The NSNFP PSO staff works under the direction of the NSNFP PSO Manager. The organization supports the NSNFP mission by directing the research and technology development activities, and coordinating and integrating crosscutting functions with the DOE SNF and HLW sites, OCRWM, and other DOE organizations as requested by the NSNFP Manager. The functions of the NSNFP PSO technical staff are as follows:

1. Prepare program management documentation and detailed work plans, plan and schedule integrated DOE SNF and HLW activities, track program commitments, support the program's systems engineering approach, provide general technical support, and participate in technical working group activities.
2. Prepare life-cycle planning documentation and funding request documents consistent with site schedules and repository planning documents.

3. Perform work in accordance with NSNFP procedures.
4. Prepare documents in accordance with NSNFP procedures and interface with the PSO support staff and PSO Manager or the appropriate technical lead to issue approved documents.
5. Participate in formal reviews of documents prepared by others.
6. Prepare Task Management Agreements associated with assigned tasks.
7. Prepare procurement requisitions for items and services from the private sector that are within the scope of the assigned task.
8. Interface with the approved procurement service to facilitate or perform actions within the NSNFP-approved processes established by the procurement service.
9. Provide day-to-day internal and external coordination for NSNFP/supplier interactions and formal communication to suppliers supporting assigned tasks.
10. Participate in the initial acceptance of suppliers to the NSNFP and annual supplier performance reviews of each active supplier associated with assigned tasks.
11. Accept the products of suppliers on behalf of the PSO based on internal PSO reviews.
12. Prepare and submit records stipulated by NSNFP procedures.
13. Support the development and recommendation of implementation strategies for NEPA, NRC, and other regulatory requirements; assist with the technical preparation and review of NEPA documents; and assist with the complexwide programmatic review of NEPA documents.
14. Address complexwide SNF and HLW vulnerabilities and safety issues by researching, assisting in preparing, reviewing, and recommending approval and concurrence with such studies and documents.
15. Implement and maintain a complexwide SNF database that contains information on the quantity, condition, type, location, origin, and enrichment of all SNF within the DOE inventory.
16. Direct the research, development, and testing of treatment, shipment, and disposal technologies for all DOE SNF and HLW.
17. Prepare technology integration plans, support waste analysis activities, assist with performance assessments and acceptance criteria, and develop stabilization technologies.
18. Recommend safe, cost-effective, and technologically appropriate interim storage approaches and budgetary strategies; support assessments on existing storage facilities; and integrate detailed transportation plans on how DOE SNF and HLW is to be moved and the routes to be used.
19. Provide technical assistance to meet and resolve NSNFP issues related to the QA requirements.

3.2.3 The PSO Quality Engineer

1. Participates in the establishment of procedures and processes.

2. Assists in the generation of responses to deficiencies identified during independent assessments in accordance with processes established or approved by the NSNFP and as, applicable, implements the approved responses.
3. Plans and performs assessments as assigned by the NSNFP QASM in accordance with NSNFP procedures when independent of the activity being assessed.
4. Interfaces with the PSO staff, PSO Manager, or QASM to resolve QA issues.
5. Provides guidance to the PSO staff for QA Program implementation and seeks interpretations from the NSNFP QASM as necessary to support the PSO.
6. Participates in document reviews as stipulated by NSNFP procedures.
7. Performs work in accordance with NSNFP procedures.
8. Participates in the development and maintenance of NSNFP Work Planning/Quality Program Applicability Evaluations.
9. Reviews NSNFP-generated task management agreements.
10. Reviews NSNFP-generated technical documents.
11. Participates in annual performance evaluations of active suppliers.
12. Prepares draft implementing documents in accordance with NSNFP procedures and interfaces with the PSO support staff and PSO Manager during document development.
13. Interfaces with the approved procurement service to facilitate or perform QE-related actions within the NSNFP-approved processes established by the procurement service.
14. Coordinates with NSNFP QAS during the initial acceptance of NSNFP suppliers and annual supplier performance reviews of each active supplier.
15. Participates in reviews for acceptance of the products from suppliers as stipulated by NSNFP procedures.
16. Prepares QA records or reviews QA records prepared by others.

3.2.4 The PSO Support Staff

3.2.4.1 NSNFP Training Coordinator.

1. Performs work in accordance with NSNFP procedures.
2. Interfaces with the NSNFP Manager; the NSNFP QASM; and the PSO Manager to establish training and qualification needs for their respective staffs.
3. Facilitates verification of experience for NSNFP personnel and NSNFP staff augmentation personnel.

4. Tracks training and qualification status and reports delinquencies or omissions to the respective managers.
5. Interfaces with document preparers/requesters to confirm applicable training has been accomplished prior to entering a document into the review cycle.
6. Interfaces with NSNFP personnel to confirm applicable training requirements are met prior to releasing a new or revised document or adding personnel to existing distribution lists.

3.2.4.2 NSNFP Document Control Coordinator.

1. Performs work in accordance with NSNFP procedures.
2. Interfaces with the NSNFP Manager, the NSNFP QASM, and the PSO Manager and their staffs to establish controlled document distribution for their respective documents.
3. Prepares tables of content for the *NSNFP Documents Manual*.
4. Coordinates placement of NSNFP documents on NSNFP websites and makes hard copy distribution of selected documents.
5. Controls document numbering to provide a unique numbering scheme for NSNFP documents.
6. Provides records management support to the NSNFP in accordance with procedures.
7. Safeguards NSNFP records and supports records turnover to others as authorized by the NSNFP Manager.
8. Enforces limits and controls for access to NSNFP records.
9. Maintains a NSNFP file guide list for NSNFP records, including QA records and makes the list available to NSNFP personnel.

3.3 NSNFP Quality Assurance Staff Manager (M&O Contractor)

The NSNFP QASM directly supports the NSNFP Manager, DOE-ID. The NSNFP QASM assigns work tasks to the QAS and performs the following functions:

1. Participates in the development of the NSNFP QA program implementing documents including the NSNFP QAPP, the NSNFP Quality Assurance Requirements and Description (QARD) Requirements Matrix, and NSNFP procedures.
2. Adheres to and requires all QAS personnel to adhere to the NSNFP policy directing mandatory compliance with the NSNFP QA Program.
3. Freely communicates with senior management positions within the NSNFP.
4. Determines training and qualification needs of QAS personnel and provides confirmation that the needs have been met.
5. Provides QA program assessments (Internal Audits and Surveillances).

6. Establishes internal controls and external interfaces for QA program oversight.
7. Assigns tasks to the NSNFP QAS and monitors the NSNFP QAS for performance to baseline documents.
8. Maintains a process to evaluate significant conditions adverse to quality and administer stop work actions if required.

3.3.1 NSNFP QAS Personnel

1. Performs assigned work in accordance with NSNFP procedures.
2. Provides draft procedures and processes for approval.
3. Adheres to the NSNFP policy directing mandatory compliance with the NSNFP QA Program.
4. Generates responses to deficiencies identified during independent assessments in accordance with approved processes and implements the approved responses.
5. Interfaces with PSO QE, the PSO Manager, and the NSNFP Manager, as applicable to resolve QA issues.
6. Participates in assigned document reviews.
7. Prepares QA records or reviews QA records prepared by others.
8. Performs assigned audits and surveillances.

4. NSNFP INTERFACES

The NSNFP interfaces with a number of key participants to perform the DOE SNF and HLW mission. Each participant provides an important function in the success of the NSNFP mission and the ultimate disposition of DOE SNF and HLW. Figure 2 illustrates the primary NSNFP interfaces.

The primary interface for the disposition of DOE SNF and HLW occurs through the *Memorandum of Agreement for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste*. This document defines this interface along with the responsibilities of EM and OCRWM with regard to SNF and HLW. The MOA establishes the terms and conditions under which OCRWM will make available disposal services to EM for all DOE SNF and HLW. The MOA was established between two main offices of DOE, the Office of Environmental Management (EM-1) and the Office of Civilian Radioactive Waste Management (RW-1).

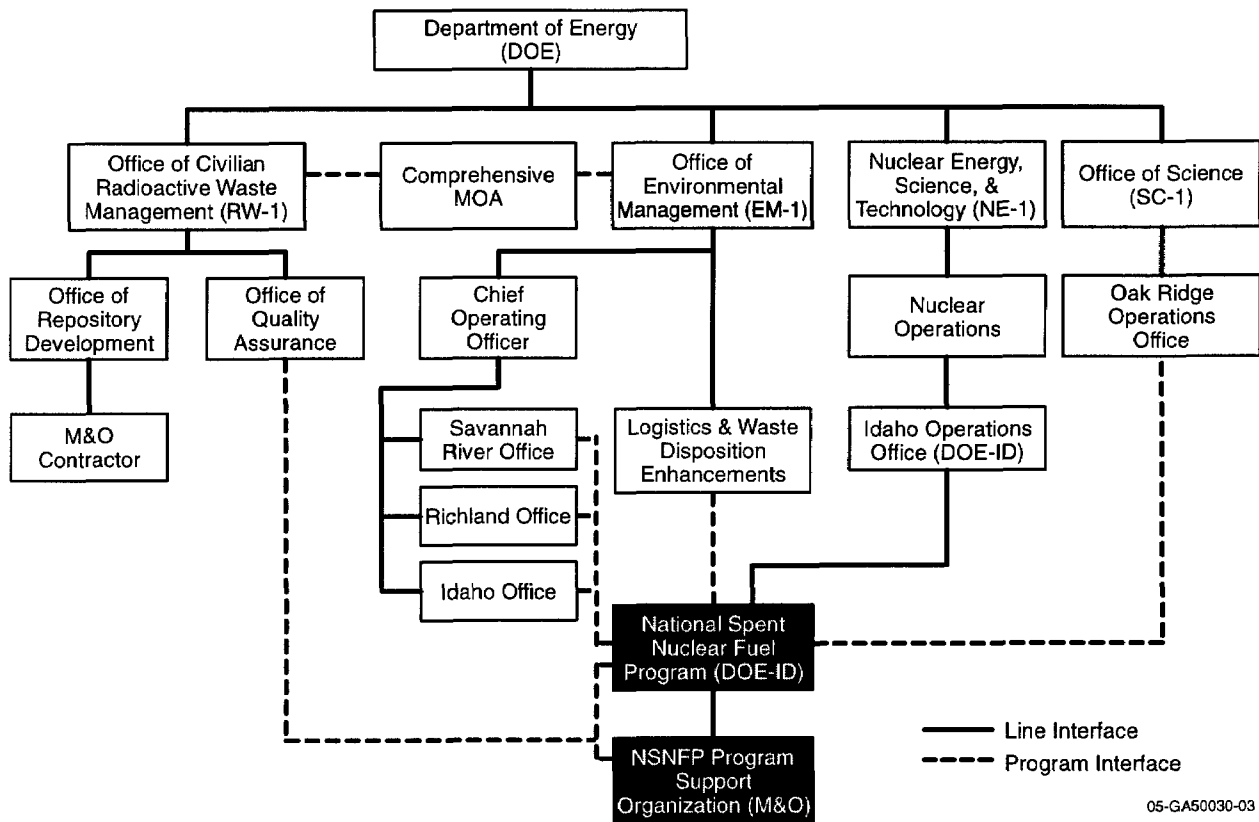


Figure 2. NSNFP interfaces.

4.1 NSNFP and Supporting Organizations

4.1.1 NSNFP

The NSNFP Manager interfaces with several organizations to effectively achieve the NSNFP mission. The NSNFP defines its responsibilities and authorities through a technical interface with the Office of Logistics and Waste Disposition Enhancements and a direct line management interface with DOE-ID. The NSNFP also plans and negotiates budget allocation through DOE-ID. The NSNFP provides

strategic direction and oversight to the NSNFP PSO to be formalized in detailed work planning. It provides guidance to all DOE SNF and HLW sites for technical matters related to repository acceptance.

In addition, the NSNFP interfaces with the Office of Repository Development regarding matters related to the terms and conditions listed in the MOA mentioned above and all matters related to DOE SNF inclusion in the repository. The NSNFP QAPP defines the interfaces of the NSNFP for quality-related matters.

4.1.2 NSNFP Program Support Organization

The NSNFP PSO is accountable to the DOE-ID NSNFP Manager for implementing work scope defined through the Detailed Work Plan. The WBS of the Detailed Work Plan is described in Section 5 of this document. The NSNFP PSO interfaces with the Office of Repository Development and its M&O Contractor, and OCRWM on technical matters related to the acceptance of DOE SNF as agreed to with the NSNFP Manager.

The NSNFP PSO also interfaces with the DOE SNF and HLW sites on technical matters regarding characterization, packaging, storage, and shipment of SNF and HLW. Issues are addressed through strategic meetings, conference calls, and topical meetings and calls. Interfaces related to quality matters are defined in detail in the NSNFP QAPP.

4.1.3 NSNFP Quality Assurance Staff

The NSNFP QASM communicates with senior management positions within the NSNFP and DOE-ID. The QASM interfaces with the OCRWM Office of Quality Assurance to clarify QA program requirements and maintains approval of the NSNFP QA Program. Detailed interfaces related to QA are defined in the NSNFP QAPP.

4.2 Office of Environmental Management

The Assistant Secretary for EM originally assigned the interface for the NSNFP to the Office of Nuclear Material and Spent Fuel (EM-21) and has recently reassigned the responsibility to the newly established Office of Logistics and Waste Disposition Enhancements.

4.3 Office of Civilian Radioactive Waste Management

The OCRWM Office of the Director has been delegated overall responsibility for carrying out the functions of the Secretary of Energy as prescribed in the Nuclear Waste Policy Act, as amended. The Office of the Director is responsible for providing leadership in developing and implementing strategies to accomplish the program's mission in a manner that ensures public and worker health and safety, protects the environment, merits public confidence, and is economically viable. The OCRWM Director delegates to OQA the responsibility of the QA functions for the OCRWM program.

4.3.1 Office of Quality Assurance (RW-3)

The Director of the OQA (RW-3) has the responsibility of the QA functions for the OCRWM program and oversees the implementation of the QARD, DOE/RW-0333P by the NSNFP. The OQA oversees QA activities for the NSNFP by:

- Ensuring that a QA program that meets regulatory and management requirements is established, maintained, and effectively executed.

- Verifying that activities subject to the QARD have been correctly performed by reviews, surveillance, and audits (compliance and performance based), or other means of verification, as appropriate.

The OQA relies upon the DOE EM/RW QA Oversight Team to perform activities to ensure that EM contractor QA programs are in compliance with QARD requirements. The Oversight Team is normally led by an EM representative from the Office of Integrated Safety Management/Operations Oversight. The Oversight Team is responsible for audits, surveillances, site QA program qualification, corrective action tracking, corrective action closure verification, and functioning as the OCRWM Office of Quality Assurance interface with DOE SNF sites.

4.4 DOE SNF Field Offices

The DOE field offices and their contractors interface with the NSNFP on matters of coordination and integration of DOE SNF activities. The field offices/sites include the Savannah River Site, the Hanford Site, and the INL. Site contractors implement the actions that result from the coordination activities. Interfaces with the NSNFP specifically address:

- Coordinating and establishing DOE sites' SNF and HLW disposal effort using an integrated shipping schedule
- Identifying and addressing national DOE SNF and HLW issues such as characterization and packaging
- Establishing successful SNF and HLW disposal strategies.

4.5 External Interfaces

In addition to the external interfaces already discussed above, the NSNFP interfaces with numerous organizations external to the DOE SNF and HLW Program to ensure successful completion of the NSNFP mission and to establish opportunities to apply SNF and HLW solutions to address other waste issues.

4.5.1 Other Federal Agencies

The NSNFP supports OCRWM as it interfaces with the NRC for repository licensing. This support to OCRWM provides the means to ensure DOE SNF and HLW is fully incorporated in the license application documents.

4.5.2 Industrial Standards Organizations

The NSNFP has technical experts participating on committees for both the American Society of Mechanical Engineers and the American Society for Testing and Materials. Through these committee members, the NSNFP is applying SNF and HLW expertise to address national issues while working to ensure these standards address the material science and canister needs of the program.

4.5.3 Other DOE National and Waste Programs

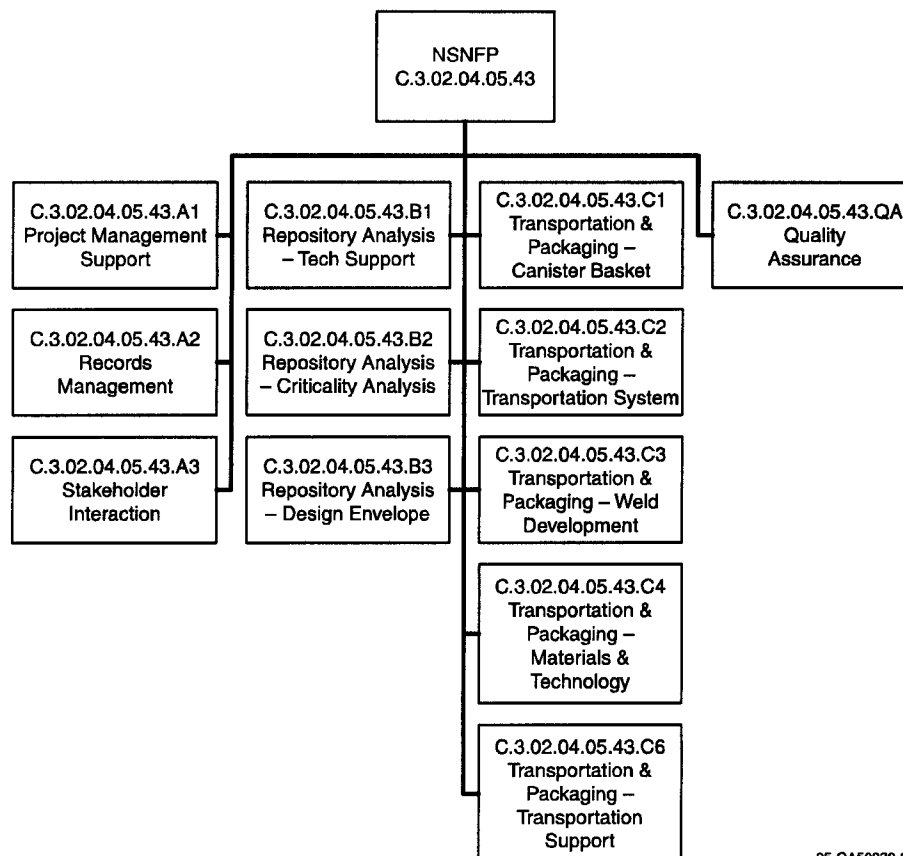
The NSNFP has established interfaces with other waste and national programs to find integrated solutions to the common needs of these programs. The NSNFP management coordination of both DOE SNF and HLW programs due to their many overlapping issues has resulted from such interfaces. Other

interfaces are being established with other programs to share solutions and find efficient ways to address their common issues (e.g., transportation and packaging and the transuranic waste program activities).

5. SUMMARY WORK SCOPE

5.1 Work Breakdown Structure

Figure 3 is the NSNFP Project WBS, a product-oriented hierarchy of the work and products.



05-GA50030-05

Figure 3. NSNFP work breakdown structure.

5.2 Work Breakdown Structure Dictionary

This section provides a brief description of each of the elements defined in the WBS. A summary of the Fiscal Year 2005 Detailed Work Plan budget, schedule, and milestones is provided in Appendix A of this document.

5.2.1 Control Account Level

C.3.02.04.05.43—National Spent Nuclear Fuel Program. The objective of the NSNFP is to define and ensure resolution of all associated issues for the characterization, safe interim storage, and proper final disposition of all DOE SNF and HLW. The technical strategy of the NSNFP is to develop innovative approaches and products designed to move DOE SNF and HLW closer to its final disposition. The following work scope comprises the NSNFP.

The NSNFP work scope includes program management for the NSNFP for the inclusion of DOE SNF and HLW in the repository programs site evaluation, design, and licensing activities. This work directly supports commitments made between DOE-EM and OCRWM regarding the scope of activities

that are required under the repository licensing criteria in 10 CFR Part 63. The program management effort includes the preparation of program planning documentation, management and integration planning, development and conduct of strategic planning meetings, monthly budget and schedule reports, funding documentation, program tracking systems inputs, monthly program performance reviews, interactions with an independent QAS, records management processes and systems, maintenance of reference libraries, and program control documentation. Particular focus is given to coordinating and facilitating DOE sites SNF and HLW disposal efforts, managing national DOE SNF and HLW issues, and interfacing with the Yucca Mountain Repository Program.

Repository Analysis performs specific analyses for DOE SNF and HLW to support inclusion in the repository programs licensing activities including waste acceptance. This work directly supports commitments made between DOE-EM and OCRWM regarding the scope of analyses that are required under the repository licensing criteria in 10 CFR Part 63. The types of analyses to be performed support preclosure and postclosure criticality safety; waste package thermal, structural, and radiation shielding analyses; compatibility with the repository environment; preclosure safety analysis; and postclosure total system performance assessment for DOE SNF and HLW. Work planning and documentation under this activity requires close interface with DOE's OCRWM Yucca Mountain Repository Program, which defines the requirements to be satisfied and serves as the primary outside customer for the work performed. Additional tasks include modeling, analysis, and experimentation to evaluate any unique characteristics of DOE SNF and HLW waste forms. Under this work, a detailed SNF database is maintained and updated to support DOE plans for ultimate disposition of DOE SNF.

Transportation and Packaging directly supports commitments made between DOE-EM and OCRWM regarding the scope activities that are required under the repository licensing criteria in 10 CFR Part 63. The NSNFP will provide standardized canister design input data for the packaging, interim storage, shipment, and disposal of SNF in accordance with the MOA between the Office of EM and the OCRWM. (Note: Others are providing the design of the standardized canister). Material testing will be performed to validate material properties used in the analysis. Additional testing will be performed to ensure the analytical models are valid for canister performance during preclosure events. Developments affecting the design, loading, and handling aspects will be communicated to user organizations. Support will be provided to OCRWM to defend the canister design to the NRC, particularly in the area of low probability of breach during a drop event. The transportability of the multi-canister overpack was originally designed for transportation in the vertical position at the Hanford site. Disposal in the repository will require its transportation in the horizontal position to meet highway and rail overhead restriction. Support will be provided to OCRWM for the acquisition of a cask transportation system to ship DOE SNF and HLW from the DOE custodial sites to the repository. An interface between OCRWM and the sites on transportation issues will be provided. Remote welding and nondestructive examination will be pursued to perform the final closure weld of the standardized canister. Advanced Neutron Absorber development in support of packaging, transportation, and disposal is performed as part of the materials work scope.

NSNFP QA provides a trained and qualified QAS to support the NSNFP to develop and maintain the NSNFP QA Program and provide QA oversight and quality engineering support for the NSNFP organization. It provides a QE to support the quality affecting activities performed by NSNFP technical staff and ensure that those activities are performed in accordance with the NSNFP QA program implementation documents and the OCRWM QARD, DOE/RW-0333P.⁷ The NSNFP QA program is approved by OCRWM. OCRWM mandates that the NSNFP maintain compliance with the QARD to ensure compliance with the regulatory requirements. Maintaining compliance with regulatory requirements will allow the ultimate acceptance and disposal of DOE SNF at the licensed repository.

6. QUALITY ASSURANCE

The NSNFP QAPP describes the NSNFP QA policy, the NSNFP organization structure, the internal and external QA interfaces, the general QA program principles applicable to the scope for the NSNFP mission, and the roles and responsibilities of the NSNFP with respect to QA. The NSNFP adopts QARD principles for engineering and design-related activities intended to guide the development of a path forward for successful disposition of DOE SNF. Work performed by the NSNFP that will be relied on to develop design requirements is subject to the QARD. The NSNFP implements QA requirements by complying with NSNFP implementing procedures.

The NSNFP policy is to institute, implement, and maintain an effective QA program in all aspects of its work that may affect the safety and protection of workers, the public, or the environment. The NSNFP QA Program has been developed with these objectives in mind as defined in the QAPP.

7. REFERENCES

1. DOE, *Memorandum of Agreement for Acceptance of Department of Energy Spent Nuclear Fuel and High-Level Radioactive Waste*, Rev. 1, between the Assistant Secretary for DOE-EM, Washington, D.C., and the Director of DOE-RW, Washington, D.C., January 1999.
2. DOE, *Action Memorandum to Approve Transfer of Responsibility of the Design, NRC Certification, and Fabrication of the Transportation Cask System*, July 2002.
3. Frank Marcinowski, Deputy Assistant Secretary for Logistics and Waste Disposition enhancements, DOE-HQ letter to Beth Sellers, Manager Idaho Operations Office, DOE-ID, "FY 2005 Guidance for the National Spent Nuclear Fuel Program," May 2, 2005.
4. DOE, *Department of Energy's Record of Decisions for Programmatic Spent Nuclear Fuel and Idaho National Engineering Laboratory, Environmental Restoration and Waste Management Programs*, as amended, March 1996.
5. DOE, Consent Order (PSC 1995) for spent nuclear fuel among the State of Idaho, the U.S. Navy, and the U.S. Department of Energy, October 1995.
6. DOE, *Idaho High-Level Waste & Facilities Disposition Final Environmental Impact Statement*, DEO/EIS-0287, September 2002.
7. DOE, *Quality Assurance Requirements and Description*, Rev. 16, Office of Civilian Radioactive Waste Management DOE/RW-0333P, August 23, 2004.

Appendix A

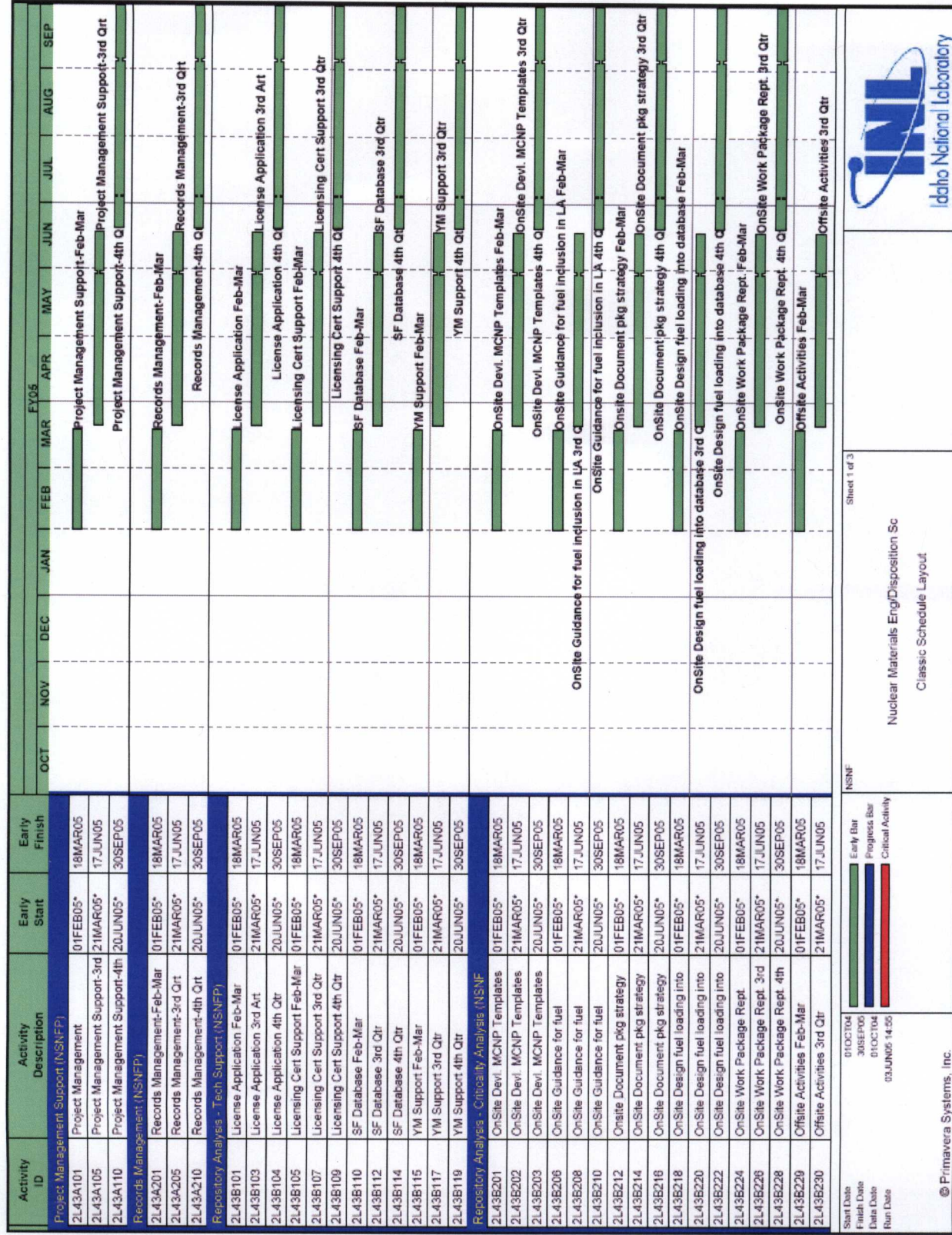
FY 2005 Detailed Work Plan Summary

Appendix A

FY 2005 Detailed Work Plan Summary

The following pages provide a summary of the National Spent Nuclear Fuel Program Detailed Work Plan for Fiscal Year 2005. Included are the Project Plan Budget Reports, summary schedules, and milestones. The Detailed Work Plan is a living document with changes documented through a formal change control process. The Detailed Work Plan reflects the budget as agreed to at the Idaho National Laboratory contract change on February 1, 2005.

Program: E161											
Run Date:											
		6/3/2005									
WBS[7]											
C.3.02.04.05.43.A1 Project Management Support (NSNFP)	BCWS	FEB 2005	MAR 2005	APR 2005	MAY 2005	JUN 2005	JUL 2005	AUG 2005	SEP 2005	Cumulative	
C.3.02.04.05.43.A2 Records Management (NSNFP)	BCWS	46,154	62,145	81,096	40,436	46,223	55,510	46,432	67,950	445,946	
C.3.02.04.05.43.A3 Stakeholder Interaction (NSNFP)	BCWS	15,549	20,937	27,249	13,587	15,532	18,418	15,406	22,545	149,223	
C.3.02.04.05.43.B1 Repository Analysis - Tech Support (NSNFP)	BCWS	9,925	13,364	-23,288	0	0	0	0	0	0	
C.3.02.04.05.43.B2 Repository Analysis - Criticality Analysis (NSNFP)	BCWS	109,180	147,008	191,849	95,659	109,350	129,668	108,463	158,728	1,049,904	
C.3.02.04.05.43.B3 Repository Analysis - Design Envelope (NSNFP)	BCWS	55,736	75,047	129,931	64,786	74,058	81,715	68,352	100,028	649,653	
C.3.02.04.05.43.C2 Transportation & Packaging - Canister Basket (NSNFP)	BCWS	67,623	94,730	106,509	53,107	60,708	72,851	60,937	89,178	605,644	
C.3.02.04.05.43.C3 Transportation & Packaging - Transportation System	BCWS	75,883	101,538	-10,229	37,169	33,814	39,150	32,747	47,923	357,995	
C.3.02.04.05.43.C4 Transportation & Packaging - Weld Development (NSNF	BCWS	39,093	52,638	81,762	40,768	46,603	52,998	44,331	64,875	423,067	
C.3.02.04.05.43.C5 Transportation & Packaging - Materials & Technology	BCWS	33,299	44,837	59,423	29,629	33,870	40,163	33,595	49,164	323,981	
C.3.02.04.05.43.C6 Transportation & Packaging - Transportation Support	BCWS	82,805	111,495	120,306	66,578	76,107	90,248	75,489	110,473	733,501	
C.3.02.04.05.43.QA Quality Assurance (NSNFP)	BCWS	43,735	58,888	76,426	38,107	44,167	53,321	44,350	61,629	420,622	
Grand Totals:	BCWS	46,403	62,480	86,386	43,074	49,238	62,960	52,664	77,070	480,276	
	BCWS	625,385	845,106	927,420	522,901	589,670	697,002	582,765	849,564	5,639,812	



Activity ID	Activity Description	Early Start	Early Finish	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2L43B232	Offsite Activities 4th Qtr	20JUN05*	30SEP05							Offsite Activities 4th Qtr					
Repository Analysis - Design Envelope (NS/NFP)															
2L43B305	TSAP-LA Support Feb-Mar	01FEB05*	18MAR05												
2L43B307	TSAP-LA Support 3rd Qtr	21MAR05*	17JUN05												
2L43B308	TSAP-LA Support 4th Qtr	20JUN05*	30SEP05												
2L43B318	Evaluate License Information	10FEB05*	17JUN05												
2L43B322	RW TSPA Licensing Process	01FEB05*	18MAR05												
2L43B324	RW TSPA Licensing Process	21MAR05*	17JUN05												
2L43B326	RW TSPA Licensing Process	20JUN05*	30SEP05												
2L43B330	Support Source Term RAI	01FEB05*	18MAR05												
2L43B332	Support Source Term RAI 3rd Qtr	21MAR05*	17JUN05												
2L43B334	Support Source Term RAI 4th Qtr	20JUN05*	30SEP05												
2L43B340	Pre-Closure Safety RAI Support	01FEB05*	18MAR05												
2L43B342	Pre-Closure Safety RAI Support	21MAR05*	17JUN05												
2L43B344	Pre-Closure Safety RAI Support	20JUN05*	30SEP05												
2L43B350	RW PCSA Support-Post LA	01FEB05*	18MAR05												
2L43B352	RW PCSA Support-Post LA 3rd	21MAR05*	17JUN05												
2L43B354	RW PCSA Support-Post LA 4th	20JUN05*	30SEP05												
Transportation & Packaging - Canister Basket (NS)															
2L43C206	Friction Parameter-Reduce	21MAR05*	29APR05												
2L43C209	Matl. Eval. & Testing 3rd Qtr	21MAR05*	17JUN05												
2L43C212	Matl. Eval. & Testing 4th Qtr	20JUN05*	30SEP05												
2L43C217	Complete Aging Repts. 3rd Qtr	21MAR05*	17JUN05												
2L43C219	Complete Aging Repts. 4th Qtr	20JUN05*	30SEP05												
Transportation & Packaging - Transportation Syst															
2L43C301	MCO Transportation Feb-Mar	01FEB05*	18MAR05												
2L43C303	MCO Transportation 3rd Qtr	21MAR05*	17JUN05												
2L43C306	MCO Transportation 4th Qtr	20JUN05*	30SEP05												
Transportation & Packaging - Weld Development (N)															
2L43C401	Accelerate Welding Sys Devel.	01FEB05*	18MAR05												
2L43C403	Accelerate Welding Sys Devel.	21MAR05*	17JUN05												
2L43C406	Accelerate Welding Sys Devel.	20JUN05*	30SEP05												
2L43C420	Eddy Current System	01FEB05*	18MAR05												
2L43C422	Eddy Current System	21MAR05*	17JUN05												
2L43C424	Eddy Current System	20JUN05*	30SEP05												
Transportation & Packaging - Materials & Technol															
2L43C501	ANA Engineering Dev Feb-Mar	01FEB05*	18MAR05												
2L43C502	ANA Engineering Dev 3rd Qtr	21MAR05*	17JUN05												
2L43C504	ANA Engineering Dev 4th Qtr	20JUN05*	30SEP05												

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Sheet 2 of 3

NS/NF

Nuclear Materials Eng/Disposition Sc

Classic Schedule Layout



Idaho National Laboratory

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Activity ID	Activity Description	Early Start	Early Finish	FY05											
				OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2L43C520	ANA Props Dbase Feb-Mar	01FEB05*	18MAR05												
2L43C522	ANA Props Dbase 3rd Qrt	21MAR05*	17JUN05												
2L43C524	ANA Props Dbase 4th Qrt	20JUN05*	30SEP05												
2L43C530	ANA Corrosion Ana Feb-Mar	01FEB05*	18MAR05												
2L43C532	ANA Corrosion Ana 3rd Qrt	21MAR05*	17JUN05												
2L43C534	ANA Corrosion Ana 4th Qrt	20JUN05*	30SEP05												
2L43C540	ANA Alloy ASTM/ASIVE Feb-Mar	01FEB05*	18MAR05												
2L43C542	ANA Alloy ASTM/ASIVE 3rd Qrt	21MAR05*	17JUN05												
2L43C544	ANA Alloy ASTM/ASIVE 4th Qrt	20JUN05*	30SEP05												
2L43C551	Drying Standard-Reduced BSWP	21MAR05*	29APR05												
Transportation & Packaging - Transportation Supp															
2L43C601	NSNFP Trans Support Feb-Mar	01FEB05*	18MAR05												
2L43C602	NSNFP Trans Support 3rd Qrt	21MAR05*	17JUN05												
2L43C604	NSNFP Trans Support 4th Qrt	20JUN05*	30SEP05												
2L43C610	Trans & RWEM Planning	01FEB05*	18MAR05												
2L43C612	Trans & RWEM Planning 3rd Qrt	21MAR05*	20JUN05												
2L43C614	Trans & RWEM Planning 4th Qrt	20JUN05*	20SEP05												
2L43C620	Trans Procurement Support	01FEB05*	18MAR05												
2L43C622	Trans Procurement Support 3rd	21MAR05*	17JUN05												
2L43C624	Trans Procurement Support 4th	20JUN05*	30SEP05												
Quality Assurance (NSNFP)															
2L43CA01	QA Lead Feb-Mar	01FEB05*	18MAR05												
2L43CA04	QA Lead 3rd Qrt	21MAR05*	17JUN05												
2L43CA06	QA Lead 4th Qrt	20JUN05*	30SEP05												
2L43CA10	QE Support Feb-Mar	01FEB05*	18MAR05												
2L43CA12	QE Support 3rd Qrt	21MAR05*	17JUN05												
2L43CA14	QE Support 4th Qrt	20JUN05*	30SEP05												
2L43CA20	QAS Program Support Feb-Mar	01FEB05*	18MAR05												
2L43CA22	QAS Support 3rd Qrt	21MAR05*	17JUN05												
2L43CA24	QAS Support 4th Qrt	20JUN05*	30SEP05												
2L43CA40	NSNFP Assessments Feb-Mar	01FEB05*	18MAR05												
2L43CA42	NSNFP Assessments 3rd Qrt	21MAR05*	17JUN05												
2L43CA44	NSNFP Assessments 4th Qrt	20JUN05*	30SEP05												

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Date Date
01OCT04

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Early Bar

Progress Bar

Critical Activity

NSNFP

Nuclear Materials Eng/Disposition Sc

Classic Schedule Layout

Sheet 3 of 3

